



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

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August 29, 2002

Curt Rigger
GP - Gypsum Corporation
484 East County Road, 1400 North
Wheatfield, Indiana 46392

Re: 073-16159-00031
First Minor Source Modification to:
Part 70 permit No.: T073-12597-00031

Dear Mr. Rigger:

GP - Gypsum Corporation was issued a Part 70 operating permit T073-12597-00031 on April 25, 2002 for the operation of a wallboard manufacturing plant. An application to modify the source was received on June 28, 2002. Pursuant to 326 IAC 2-7-10.5 the following emission unit is approved for construction at the source:

A baghouse exhaust fan of the existing baghouse BCM1, which is an integral part of the existing cage mill flash drying system #0401. The upgraded fan will increase the air flow rate of baghouse BCM1 from 15,606 scfm to 17,474 scfm.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).
2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.



The source may begin construction when the source modification has been issued. Operating conditions shall be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 2-7-12. Operation is not approved until the significant permit modification has been issued.

Pursuant to Contract No. A305-0-00-36, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Yu-Lien Chu, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919)468-7871 to speak directly to Ms. Chu. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call (800) 451-6027, press 0 and ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Original Signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments

ERG/YC

cc: File - Jasper County
Jasper County Health Department
Air Compliance Section Inspector - Wanda Stanfield
Compliance Data Section - Karen Nowak
Administrative and Development - Sara Cloe
Technical Support and Modeling - Michele Boner



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PART 70 OPERATING PERMIT OFFICE OF AIR QUALITY

**GP-Gypsum Corporation
484 East County Road, 1400 North
Wheatfield, Indiana 46392**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T073-12597-00031	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: April 25, 2002 Expiration Date: April 25, 2007
First Minor Source Modification No.: 073-16159-00031	Pages affected: 4, 6, 8
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: August 29, 2002

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary source that manufactures wallboard.

Responsible Official:	Curt Rikken
Source Address:	484 East County Road, 1400 North, Wheatfield, IN 46392
Mailing Address:	484 East County Road, 1400 North, Wheatfield, IN 46392
SIC Code:	3275
County Location:	Jasper
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Minor Source, under PSD

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) raw materials truck dumping station, identified as emission unit 0201 and installed in 1999.
- (b) One (1) FGD storage bin, identified as emission unit 0301, installed in 1999, with a maximum capacity of 300 tons.
- (c) One (1) reclaim storage bin, identified as emission unit 0302, installed in 1999, with a maximum capacity of 100 tons, using integral baghouse BSR1 as control and exhausting indoors.
- (d) Two (2) biogrinders, identified as emission unit 0303, installed in 1999, with a maximum throughput of 131,400 tons/yr, using integral baghouse BRC1 and exhausting indoors.
- (e) One (1) FGD storage building, identified as emission unit 0304, installed in 1999, with a maximum capacity of 50,000 tons of FGD and other gypsum materials.
- (f) FGD Conveyors from NIPSCO, identified as emission unit 0305, installed in 1999, with a maximum throughput of 723,000 tons/yr including:
 - (1) FGD conveyors from NIPSCO to the FGD building
 - (2) FGD bin infeed conveyors
 - (3) FGD steele feeder belt and sandwich belt conveyor
- (g) Reclaim conveyors from the steele feeder to the reclaim bin, identified as emission unit 0306, installed in 1999, with a maximum throughput of 131,400 tons/yr using integral baghouse BRC1 as control and exhausting indoors.

- (h) One (1) FGD bin discharge belt conveyor, identified as emission unit 0307, installed in 1999, with a maximum throughput of 723,000 tons/yr using integral baghouse BST1 and BST2 as control of the transfer point from the reclaim bin discharge belt conveyor to this unit.
- (i) One (1) reclaim bin discharge belt conveyor, identified as emission unit 0308, installed in 1999, with a maximum throughput of 131,400 tons/yr, using integral baghouse BST1 or BST2 as control and exhausting indoors.
- (j) One (1) landplaster kettle feed bin, identified as emission unit 0501, installed in 1999, with a maximum capacity of 315,360 tons/yr, using integral baghouse BLB1 as control and exhausting indoors.
- (k) One (1) landplaster kettle feed bin, identified as emission unit 0502, installed in 1999, with a maximum capacity of 315,360 tons/yr, using integral baghouse BLB2 as control and exhausting indoors.
- (l) One (1) totally enclosed landplaster bin with feeder, identified as emission unit 0601, installed in 1999, with a maximum capacity of 5 tons using integral baghouse BLB2 for control and exhausting indoors.
- (m) One (1) totally enclosed volumetric feeder lignosulfate, identified as emission unit 0602, installed in 1999, with a maximum capacity of 5 cubic feet.
- (n) Four (4) totally enclosed ball mills, identified as emission units 0603-0606, installed in 1999, each with a maximum throughput of 300 lbs/hr.
- (o) One (1) ball mill accelerator pneumatic system, identified as emission unit 0607, installed in 1999, with a maximum capacity of 5,256 tons per year, using integral baghouse BBM1 as control and exhausting indoors.
- (p) One (1) Kason Sifter, identified as emission unit 0608, installed in 2000, with a maximum capacity of 5,256 tons pers year, using integral baghouse BLB2 for control and exhausting indoors. (Note that this unit is exempt per E 073-14500-00031, issued August 28, 2001).
- (q) Two (2) kettle heaters, identified as emission unit 0701, installed in 1999, with a maximum heat input rate of 20 MMBTU/hr and exhausting to stack SCS1.
- (r) Two (2) kettle heaters, identified as emission unit 0702, installed in 1999, with a maximum heat input rate of 20 MMBTU/hr and exhausting to stack SCS2.
- (s) Two (2) stucco recirculating bucket elevators, identified as emission unit 0801, installed in 1999, with a maximum throughput of 876,000 tons/yr, using integral baghouse BSH1 for control and exhausting to stack SSH1.
- (t) One (1) stucco cooling airveyor, identified as emission unit 0802, installed in 1999, with a maximum throughput of 525,600 tons/yr, using integral baghouse BSC1 for control and exhausting to stack SSC1.
- (u) One (1) stucco reject storage bin, identified as emission unit 0803, installed in 1999, with a maximum capacity of 5 tons, using integral baghouse BSH1 for control and exhausting to stack SSH1.

- (v) One (1) stucco storage bin, identified as emission unit 0804, installed in 1999, with a maximum capacity of 300 tons, using integral baghouse BSB1 for control and exhausting indoors.
- (w) One (1) stucco storage bin, identified as emission unit 0805, installed in 1999, with a maximum capacity of 300 tons, using integral baghouse BSB2 for control and exhausting indoors.
- (x) One (1) entoletter, identified as emission unit 0806, installed in 1999, with a maximum throughput of 525,600 tons/yr, using integral baghouse BSH1 for control and exhausting to stack SSH1.
- (y) One (1) rotary screen, identified as emission unit 0807, installed in 1999, with a maximum throughput of 525,600 tons/yr, using integral baghouse BSH1 for control and exhausting to stack SSH1.
- (z) One (1) pneumatic transfer of reject stucco, identified as emission unit 0808, installed in 1999, with a maximum throughput of 219,000 tons/yr, using integral baghouse BSP1 for control and exhausting indoors.
- (aa) One (1) 18" screw conveyor (/hot pit collection), identified as emission unit 0809, installed in 1999, with a maximum throughput of 525,600 tons/yr, using integral baghouse BSH1 for control and exhausting to stack SSH1.
- (bb) One (1) 18" screw conveyor (weigh belt scalping), identified as emission unit 0810, installed in 1999, with a maximum throughput of 525,600 tons/yr, using integral baghouse BSH1 for control and exhausting to stack SSH1.
- (cc) Two (2) 24" screw conveyors (stucco transfer), identified as emission unit 0811, installed in 1999, with a maximum throughput of 876,000 tons/yr per conveyor, using integral baghouse BSH1 for control and exhausting to stack SSH1.
- (dd) Two (2) 24" screw conveyors (stucco transfer), identified as emission unit 0812, installed in 1999 with, a maximum throughput of 876,000 tons/yr per conveyor, using integral baghouse BSH1 for control and exhausting to stack SSH1.
- (ee) One (1) 12" screw conveyor (reject stucco & paper), identified as emission unit 0813, installed in 1999, with a maximum throughput of 219,000 tons/yr, using integral baghouse BSH1 for control and exhausting to stack SSH1.
- (ff) One (1) 9" screw conveyor (return stucco dust), identified as emission unit 0814, installed in 1999, with a maximum throughput of 43,000 tons/yr, using integral baghouse BSH1 for control and exhausting to stack SSH1.
- (gg) One (1) reject stucco bucket elevator, identified as emission unit 0815, installed in 1999, with a maximum throughput of 525,600 tons/yr, using integral baghouse BSH1 for control and exhausting to stack SSH1.
- (hh) One (1) weigh belt feeder (stucco supply), identified as emission unit 0816, installed in 1999, with a maximum throughput of 525,600 tons/yr, using integral baghouse BSH1 for control and exhausting to stack SSH1.
- (ii) One (1) pin mixer, identified as emission unit 0817, installed in 1999, with a maximum production of 250,000 lbs of wet board/hr, using integral baghouse BSH1 for control and exhausting to stack SSH1.

- (jj) Seven (7) dry additive bins , identified as emission units 0901-0907, installed in 1999, each with a maximum capacity of 300 tons.
- (kk) One (1) pneumatic transfer from truck, identified as emission unit 0908, installed in 1999, with a maximum capacity of 20,000 tons/year, using integral baghouse BAS1 for control and exhausting to stack SAS1.
- (ll) One (1) starch storage bin, identified as emission unit 0909, installed in 1999, with a maximum capacity of 40 tons, using integral baghouse BAS1 for control and exhausting to stack SAS1.
- (mm) One (1) additives coating belt, identified as emission unit 0910, installed in 1999, with a maximum throughput of 21,840 tons/yr, using integral baghouse BAS2 for control and exhausting indoors.
- (nn) Eight (8) direct flame burners, identified as emission unit 1001, installed in 1999, with a total heat input rate of 20 MMBTU/hr and exhausting indoors.
- (oo) One (1) end trim system including, 2 pre-cut saws, 2 bundlers with end trim saw, a riser saw and a re-cut saw, identified as emission unit 1002, installed in 1999, with a maximum throughput of 8,650 tons/yr of end trim, using integral baghouse BST1 or BST2 for control and exhausting indoors.
- (pp) One (1) wet end seal, identified as emission unit 1003, installed in 1999, with a maximum throughput of 701,588 MSF/yr and exhausting to stack SBF5.
- (qq) One (1) board forming dryer zone one, identified as emission unit 1004, installed in 1999, with a maximum heat input rate of 50 MMBTU/hr and exhausting to stack SBF1.
- (rr) One (1) board forming dryer zone two, identified as emission unit 1005, installed in 1999, with a maximum heat input rate of 40 MMBTU/hr and exhausting to stack SBF2.
- (ss) One (1) board forming dryer zone three, identified as emission unit 1006, installed in 1999, with a maximum heat input rate of 30 MMBTU/hr and exhausting to stack SBF3.
- (tt) One (1) dry end seal, identified as emission unit 1007, installed in 1999, with a maximum throughput of 701,588 MSF/yr and exhausting to stack SBF4.
- (uu) One (1) cage mill flash drying system, identified as emission unit 0401, installed in 1999 and modified in 2002, with a maximum production of 144,000 pounds of landplaster per hour, using integral baghouse BCM1 and exhausting to stack SCM1. The design outlet grain loading of the baghouse BCM1 is 0.02 grains per standard cubic foot (grains/sdcf) and the flow rate is 17,475 standard cubic feet per minute (scfm).
- (vv) One (1) cage mill flash dryer air heater, identified as emission unit 0402, installed in 1999, with a maximum heat input rate of 40 MMBTU/hr and exhausting to stack SCM1.
- (ww) One (1) kettle/hot pit, identified as emission unit 0703, installed in 1999, with a maximum production of 60,000 lbs of stucco/hr, using integral baghouse BCS1 for control and exhausting to stack SCS3.
- (xx) One (1) kettle/hot pit, identified as emission unit 0704, installed in 1999, with a maximum production of 60,000 lbs of stucco/hr, using integral baghouse BCS2 for control and exhausting to stack SCS4.
- (yy) One (1) cold cleaner degreaser, identified as emission unit 1101 and installed in 1999.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)]
[326 IAC 2-7-5(15)]

This stationary source does not currently have any specifically regulated insignificant activities, as defined in 326 IAC 2-7-1(21).

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- (uu) One (1) cage mill flash drying system, identified as emission unit 0401, installed in 1999 and modified in 2002, with a maximum production of 144,000 pounds of landplaster per hour, using integral baghouse BCM1 and exhausting to stack SCM1. The design outlet grain loading of the baghouse BCM1 is 0.02 grains per standard cubic foot (grains/sdcf) and the flow rate is 17,475 standard cubic feet per minute (scfm).
- (vv) One (1) cage mill flash dryer air heater, identified as emission unit 0402, installed in 1999, with a maximum heat input rate of 40 MMBTU/hr and exhausting to stack SCM1.
- (ww) One (1) kettle/hot pit, identified as emission unit 0703, installed in 1999, with a maximum production of 60,000 lbs of stucco/hr, using integral baghouse BCS1 for control and exhausting to stack SCS3.
- (xx) One (1) kettle/hot pit, identified as emission unit 0704, installed in 1999, with a maximum production of 60,000 lbs of stucco/hr, using integral baghouse BCS2 for control and exhausting to stack SCS4.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Particulate Matter (PM) [40 CFR Part 60, Subpart UUU]

Pursuant to the New Source Performance Standards, 326 IAC 12 and 40 CFR 60.730 through 60.737, Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries), the particulate emissions from the calcining kettles (emission units 0703 and 0704), and the cage mill flash dryer (emission unit 0401) shall be limited as follows:

- (a) 10% opacity or less
- (b) 0.04 gr/dscf

D.3.2 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 60, Subpart UUU.

D.3.3 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Manufacturing Processes), the allowable particulate emission rate from:

- (a) The cage mill flash dryer shall not exceed 48 lbs/hr when operating at a maximum capacity flow rate of 144,000 lbs/hr.
- (b) The kettle/hot pits shall not exceed 40 lbs/hr each when operating at a maximum capacity flow rate of 60,000 lbs/hr.

The pound per hour limitations were calculated using one of the following equations:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

or depending on the process weight rate:

Interpolation and extrapolation of the data for the process weight rate in excess of 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40$$

where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.3.4 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their control devices.

Compliance Determination Requirements

D.3.5 Particulate Matter (PM)

In order to comply with Conditions D.3.1 and D.3.3, the baghouses, including those determined to be integral, for PM control shall be in operation and control emissions from the cage mill flash dryer and kettle/hot pits at all times that the cage mill flash dryer and kettle/hot pits are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.3.6 Visible Emissions Notations

- (a) Visible emission notations of the stack exhaust from stacks SCM1, SCS3, and SCS4 shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

D.3.7 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouses used in conjunction with the cage mill flash dryer and kettle/hot pits (BCM1, BCS1, and BCS2), at least once per shift when the facilities are in operation when venting to the atmosphere. When for any one reading, the pressure drop across the baghouse is outside the normal range of 0.5 and 6.5 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports. A pressure reading that is outside the

above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.3.8 Baghouse Inspections

An inspection shall be performed each calendar quarter of all bags controlling the cage mill flash dryer.

D.3.9 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B- Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.
- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.10 Record Keeping Requirements

- (a) To document compliance with Condition D.3.6, the Permittee shall maintain records of visible emission notations of the stack exhaust from stacks SCM1, SCS3, and SCS4 once per shift.
- (b) To document compliance with Condition D.3.7, the Permittee shall maintain once per shift records of the total static pressure drop during normal operation.
- (c) To document compliance with Condition D.3.8, the Permittee shall maintain records of the results of the inspections required under Condition D.3.8 and the dates the vents are redirected.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Part 70 Minor Source Modification and a Part 70 Significant Permit Modification

Source Background and Description

Source Name:	GP-Gypsum Corporation
Source Location:	484 East County Road, 1400 North, Wheatfield, IN 46392
County:	Jasper
SIC Code:	3275
Operation Permit No.:	T073-12597-00031
Operation Permit Issuance Date:	April 25, 2002
Minor Source Modification:	073-16159-00031
Significant Permit Modification:	073-16435-00031
Permit Reviewer:	ERG/YC

The Office of Air Quality (OAQ) has reviewed a modification application from GP-Gypsum Corporation relating to the modification of the following emission units and pollution control devices:

One (1) cage mill flash drying system, identified as emission unit 0401, installed in 1999 and modified in 2002, with a maximum production of 144,000 pounds of landplaster per hour, using integral baghouse BCM1 and exhausting to stack SCM1. The design outlet grain loading of the baghouse BCM1 is 0.02 grains per standard cubic foot (grains/sdcf) and the flow rate is 17,475 standard cubic feet per minute (scfm).

History

On June 28, 2002, GP-Gypsum Corporation submitted an application to the OAQ requesting to upgrade the baghouse exhaust fan of the existing baghouse BCM1, which was determined to be an integral part of the cage mill flash drying system #0401 in source's Part 70 Permit. The maximum throughput rate of the existing cage mill flash drying system #0401 remains the same, and there is no increased utilization as a result of this upgrade. GP-Gypsum Corporation was issued a Part 70 permit (#073-12597-00031) on April 25, 2002.

Currently, baghouse BCM1 is operating with a design outlet grain loading of 0.02 grains/dscf and an air flow rate of 15,606 scfm. The upgraded fan will increase the air flow rate of baghouse BCM1 from 15,606 scfm to 17,474 scfm, which will increase the drying efficiency of the existing cage mill flash drying system #0401 to make a higher quality product. Since baghouse BCM1 is an integral part of the cage mill flash drying system #0401, the increase of the flow rate of baghouse BCM1 will result in the increase of the potential particulate emissions from the existing cage mill flash drying system #0401.

Air Pollution Control Justification as an Integral Part of the Process

In the gypsum industry, baghouses are considered Best Available Control Technology (BACT), but their primary purpose is process related rather than pollution control. The baghouses are utilized primarily as a means to collect, consolidate, and transfer process materials/products from a pneumatic conveyance system to a screw conveyor, storage bin, belt conveyor, or stockpile. These functions are evident in the process flow diagrams for the facility.

IDEM, OAQ has evaluated the justifications and agreed that baghouse BCM1 is considered as an integral part of the cage mill flash drying system #0401. Therefore, the permitting level will be determined using the potential to emit after the baghouse. The determination that baghouse BCM1 is integral to the cage mill flash drying system #0401 was made during source's Title V permit review process.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Part 70 Minor Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on June 28, 2002.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (page 1).

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	13.1
PM-10	13.1
SO ₂	--
VOC	--
CO	--
NO _x	--

The comparison between the new and the previous baghouse exhaust fans:

Process/Facility	Air Flow Rate (scfm)	Potential to Emit (tons/year)	
		PM	PM-10
The previous baghouse exhaust fan	15,606	11.7	11.7
The proposed new baghouse exhaust fan	17,474	13.1	13.1

Justification for Modification

This modification is being performed through a Part 70 Minor Source Modification pursuant to 326 IAC 2-7-10.5(d)(4) as the potential to emit PM/PM10 is greater than 5 tons per years and less than 25 tons per year, and pursuant to 326 IAC 2-7-10.5(d)(6) as the cage mill flash drying system #0401 is subject to a NSPS (40 CFR 60, Subpart UUU). The permit modification is being performed through a Significant Permit Modification pursuant to 326 IAC 2-7-12(d) because this is a modification under a provision of Title I of CAA.

County Attainment Status

The source is located in Jasper County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Jasper County has been designated as attainment for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Jasper County has been classified as attainment or unclassifiable for all other criteria. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (d) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	112.66

PM-10	112.66
SO ₂	0.58
VOC	85.98
CO	80.94
NO _x	113.88

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the 28 listed source categories.
- (b) These emissions are based upon the Technical Support Document (TSD) for the source's Title V permit 073-12597-00031, issued April 25, 2002.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Cage Mill Flash Drying System (#0401)	44.7 13.1	44.7 13.1	--	--	--	--	--
*Total Emissions of the Existing Source	442.7 101.0	442.7 101.0	0.58	86.0	80.9	113.9	1.73
Total Emissions of the Entire Source After Modification	114.1	114.1	0.58	86.0	80.9	113.9	1.73
PSD Thresholds	250	250	250	250	250	250	NA

* Note: The PM/PM10 emissions from the existing source are the potential to emit in TSD of Title V permit (#073-12597-00031, issued April 25, 2002) minus the potential to emit of the cage mill flash drying system #0401.

This modification to an existing minor stationary source is not major because the source is going to maintain their PSD minor source status. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Federal Rule Applicability

- (a) The cage mill flash dryer # 0401 with baghouse BCM1 as integral part of the process is subject to the requirements of the New Source Performance Standard, 326 IAC 12, (CFR 60.730 - 60.737, Subpart UUU) for Calciners and Dryers in Mineral Industries. The requirements of 40 CFR 60, Subpart UUU previously applied to this dryer and are contained in the Title V permit #073-16159-00031, issued on April 25, 2002, and still apply to dryer #0401 after this modification.

Pursuant to permit #073-16159-00031 and 40 CFR 60, Subpart UUU, the particulate emissions from the cage mill flash dryer # 0401 shall be limited as follows:

- (1) 10% opacity or less; and

(2) 0.04 gr/dscf.

- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this proposed modification.

State Rule Applicability - Cage Mill Flash Dryer #0401

326 IAC 6-3-2 (Manufacturing Processes)

The maximum throughput rate of the cage mill flash dryer #0401 remains 144,000 pounds of landplaster per hour. Therefore, the allowable particulate emissions from the cage mill flash drying system #0401 shall not exceed 48.0 lbs/hr when the process weight rate is 144,000 lbs/hr, which is the same limit contained in Title V permit #073-16159-00031, issued April 25, 2002 for dryer #0401.

The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

According to the emission calculations (see Appendix A), the potential to emit PM from this drying system is less than the limit above. Therefore, the cage mill flash drying system #0401 is in compliance with 326 IAC 6-3-2.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification are as follows:

1. The cage mill flash drying system #0401 has the same applicable compliance monitoring conditions as the ones in the Title V permit. These monitoring conditions are specified below:
 - (a) Visible emissions notations of the baghouse exhaust (SCM1) shall be performed once per shift during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup

or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

- (b) The Permittee shall record the total static pressure drop across the baghouse BCM1 controlling the cage mill flash drying system #0401, at least once per shift when the cage mill flash drying system is in operation. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouse BCM1 shall be maintained within the range of 0.5 to 6.5 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of the above mentioned range for any one reading.
- (c) An inspection shall be performed each calendar quarter of all bags controlling the cage mill flash drying system #0401. A baghouse inspection shall be performed within the last month of each calendar quarter. Inspections are optional when venting indoors. All defective bags shall be replaced. In the event that bag failure has been observed:
 - (1) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit.
 - (2) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit.

These monitoring conditions are necessary because baghouse BCM1 for the cage mill flash drying system #0401 must operate properly to ensure compliance with 326 IAC 6-3 (Manufacturing Processes) and 40 CFR 60, Subpart UUU.

Proposed Changes

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
[326 IAC 2-7-5(15)]

- (uu) One (1) cage mill flash drying system, identified as emission unit 0401, installed in 1999 **and modified in 2002**, with a maximum production of 144,000 pounds of landplaster per hour, using integral baghouse BCM1 ~~as control~~ and exhausting to stack SCM1. **The design outlet grain loading of the baghouse BCM1 is 0.02 grains per standard cubic foot (grains/sdcf) and the flow rate is 17,475 standard cubic feet per minute (scfm).**

Facility Description [326 IAC 2-7-5(15)]

- (uu) One (1) cage mill flash drying system, identified as emission unit 0401, installed in 1999 **and modified in 2002**, with a maximum production of 144,000 pounds of landplaster per hour, using integral baghouse BCM1 ~~as control~~ and exhausting to stack SCM1. **The design outlet grain loading of the baghouse BCM1 is 0.02 grains per standard cubic foot (grains/sdcf) and the flow rate is 17,475 standard cubic feet per minute (scfm).**
- (vv) One (1) cage mill flash dryer air heater, identified as emission unit 0402, installed in 1999, with a maximum heat input rate of 40 MMBTU/hr and exhausting to stack SCM1.
- (ww) One (1) kettle/hot pit, identified as emission unit 0703, installed in 1999, with a maximum production of 60,000 lbs of stucco/hr, using integral baghouse BCS1 for control and exhausting to stack SCS3.
- (xx) One (1) kettle/hot pit, identified as emission unit 0704, installed in 1999, with a maximum production of 60,000 lbs of stucco/hr, using integral baghouse BCS2 for control and exhausting to stack SCS4.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Upon further review, the IDEM, OAQ has made the following changes to reflect the updated rules:

D.3.3 Particulate Matter (PM) [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (**Manufacturing Processes Operations**), the allowable PM **particulate** emission rate from:

- (a) The cage mill flash dryer shall not exceed 48 lbs/hr when operating at a maximum capacity flow rate of 144,000 lbs/hr.

D.3.8 Baghouse Inspections

An inspection shall be performed each calendar quarter of all bags controlling the cage mill flash dryer. ~~when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors. All defective bags shall be replaced.~~

D.3.10 Record Keeping Requirements

- (b) To document compliance with Condition D.3.7, the Permittee shall maintain ~~the following:~~ **once per shift records of the total static pressure drop during normal operation.**

- ~~(1) Once per shift records of the following operational parameters during normal operation when venting to the atmosphere:~~
 - ~~(A) Inlet and outlet differential static pressure; and~~
 - ~~(B) Cleaning cycle operation.~~
- ~~(2) Documentation of the dates vents are redirected.~~

Conclusion

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Minor Source Modification No. 073-16159-00031, and the operation of this modification shall be subject to the conditions of the proposed Part 70 Significant Permit Modification No. 073-16435-00031.

Appendix A: Emission Calculations
PM/PM10 Emissions
From the Cage Mill Flash Drying System (#0401)

Company Name: GP-Gypsum Corporation
Address City IN Zip: 484 East County Road, 1400 North, Wheatfield, IN 46392
MSM: 073-16159-00031
Reviewer: ERG/YC
Date: August 27, 2002

1. Process Description:

*PM Control Equipment: Baghouse BCM1
Grain Loading: 0.02 grains/dscf
Air Flow Rate: 17,475 scf/m
Control Efficiency: 99.0%

*Note: The baghouse BCM1 has been determined to be an integral part of the drying system (#0401) in TV permit #073-12597-00031, issued April 25, 2002.
Thus, the potential to emit of the drying system is determined after the baghouse BCM1.

2. **Potential to Emit (PTE) of PM/PM10:

Hourly PTE of PM/PM10 = $0.02 \text{ (gr/dscf)} \times 17,475 \text{ (scf/min)} \times 60 \text{ (min/hr)} \times 1/7000 \text{ (lb/gr)} =$ **3.00 lbs/hr**

Annual PTE of PM/PM10 = $3.0 \text{ lbs/hr} \times 8760 \text{ hr/yr} \times 1/2000 \text{ (ton/lb)} =$ **13.12 tons/yr**

**Note: Assume all the PM emissions equal to PM10 emissions.